



Remedial Investigation / Feasibility Study

Progress Report #22
August 2018

September 10, 2018

Prepared for:
Columbia Falls Aluminium Company, LLC
2000 Aluminium Drive
Columbia Falls, Flathead County, Montana

Prepared by:
**Roux Environmental Engineering
and Geology, D.P.C.**
209 Shafter Street
Islandia, New York 11749

Environmental Consulting
& Management
+1.800.322.ROUX
rouxinc.com

Table of Contents

1. Introduction	1
2. Work Completed	2
2.1 Submittal of Revised Baseline Risk Assessment Work Plans	2
2.2 Submittal of Draft Background Sampling and Analysis Plan.....	2
2.3 Field Modifications	2
2.4 Preparation of Risk Assessment Interim Deliverables	2
2.5 Investigation Derived Waste Disposal	3
2.6 Preparation of the Phase II Site Characterization Data Summary Report	3
2.7 Weekly Reporting, Project Conference Calls, and Project Meetings	3
3. Work Planned for Next Reporting Period	4
3.1 Baseline Risk Assessment Work Plans	4
3.2 Background Sampling and Analysis Plan.....	4
3.3 Preparation of Risk Assessment Interim Deliverables	4
3.4 Phase II Site Characterization Field Activities	4
3.5 Preparation of the Phase II Site Characterization Data Summary Report	4
3.6 Investigation Derived Waste.....	4
4. Database Updates	6
5. Scope/Schedule Revisions	7

Appendix

- A. Project Schedule

1. Introduction

This Progress Report (Report) prepared by Roux Environmental Engineering and Geology, D.P.C. (Roux) presents a summary of activities completed during the period of August 2018, on behalf of Columbia Falls Aluminum Company, LLC (CFAC), for the Remedial Investigation / Feasibility Study (RI/FS) being performed at the Anaconda Aluminum Co. Columbia Falls Reduction Plant (a/k/a Columbia Falls Aluminum Plant) generally located near Columbia Falls in Flathead County, Montana ("Site"). The RI/FS is being conducted pursuant to the Administrative Settlement Agreement and Order on Consent (AOC) dated November 30, 2015 between CFAC and the United States Environmental Protection Agency (USEPA) (CERCLA Docket No. 08-2016-0002).

This Report provides a description of the actions that have been taken to comply with the AOC during the reporting period and describes work planned for the upcoming reporting period, including an updated project schedule as Appendix A. This report also provides updates regarding the availability of any new, validated sampling data received by CFAC during the reporting period. Lastly, this Report provides an update on any scope revisions and/or project delays encountered and solutions implemented to address any changes.

2. Work Completed

This section provides a summary of activities completed or ongoing in August 2018.

2.1 Submittal of Revised Baseline Risk Assessment Work Plans

As described in prior progress reports, the draft Baseline Human Health Risk Assessment Work Plan (BHHRA WP) and Baseline Ecological Risk Assessment Work Plan (BERA WP) were revised to incorporate the multiple rounds of comments from USEPA and Montana Department of Environmental Quality (MDEQ). Roux submitted the revised BHHRA WP and the BERA WP in red-line tracked changes to USEPA/MDEQ on May 25, 2018. USEPA submitted additional comments on the BHHRA WP and BERA WP on August 31, 2018. CFAC/Roux are preparing responses to these comments to be submitted to USEPA for review and approval during the next reporting period. Following USEPA approval of the comments, Roux will finalize the work plans.

2.2 Submittal of Draft Background Sampling and Analysis Plan

CFAC/Roux submitted the Draft Background Investigation Sampling and Analysis Plan (Background SAP) to USEPA/MDEQ for review on May 25, 2018. As documented in prior progress reports, there have been multiple rounds of comments/responses and conference calls regarding the Background SAP. During this reporting period, USEPA provided additional comments on the Background SAP on August 2, 2018. CFAC/Roux prepared responses to the additional comments and submitted responses to USEPA on August 17, 2018. A call was held with USEPA, CFAC, and Roux on August 22, 2018 to discuss the responses and proposed path forward for the comments.

Based upon USEPA's review and concurrence of the additional responses, CFAC/Roux will revise the Background SAP for USEPA approval prior to the proposed background soil sampling scheduled to occur in late September 2018.

2.3 Field Modifications

No field modifications were submitted to USEPA in August 2018. Two field modifications were submitted to USEPA in June 2018 summarizing changes to the Phase II SAP. Prior to implementation, verbal concurrence to proceed with the modifications was provided by USEPA. The field modifications included the following information:

- Modification #2 (June 15, 2018) – Select Phase II soil borings and additional proposed soil borings will be analyzed for polychlorinated dibenzo-p-dioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs) in surficial and shallow soils.
- Modification #3 (June 15, 2018) – Select Phase II soil borings and additional proposed soil borings will be analyzed for total chromium and hexavalent chromium (Cr[VI]) in surficial and shallow soils.

Roux received comments from USEPA for Modification #2 and Modification #3 on June 21, 2018. CFAC/Roux submitted responses to USEPA comments on Field Modifications #2 and #3 on August 1, 2018. USEPA provided concurrence with Field Modifications #1 through #3 on August 7, 2018.

2.4 Preparation of Risk Assessment Interim Deliverables

As outlined in the draft BHHRA WP and draft BERA WP, Roux and their risk assessment subcontractor, EHS Support, prepared risk assessment interim deliverables to provide additional details regarding the risk

assessment assumptions and methodology beyond that included in the BHHRA WP and BERA WP. Roux submitted the Technical Memorandum for Proposed Wildlife Exposure Modeling Approach to Support the Baseline Ecological Risk Assessment on August 17, 2018; and submitted the Interim Deliverable for the BHHRA Work Plan on August 30, 2018. Roux and EHS Support are preparing the remaining interim deliverable regarding refined ecological screening values (ESVs) to supplement the BERA WP and will submit the interim deliverable to USEPA/MDEQ for review and approval during the next reporting period.

2.5 Investigation Derived Waste Disposal

Investigation-derived waste (IDW) generated during the Phase II Site Characterization field activities are being managed in accordance with the IDW Management Plan dated May 9, 2016 and the AOC. Monitoring well development purge water and groundwater IDW is being stored onsite in accordance with the IDW Management Plan. Water IDW will continue to be generated through October 2018 as groundwater, surface water, and porewater sampling activities continue. Upon completion of sampling activities, Roux personnel will collect water IDW samples from the container onsite and disposal of water will be coordinated in accordance with the IDW Management Plan and AOC.

2.6 Preparation of the Phase II Site Characterization Data Summary Report

Roux continued to review and analyze the field and laboratory data generated during the Phase II Site Characterization Program. As described in Section 4.0, all validated laboratory data from the first round of sampling in 2018 was received in August. The Draft Phase II Site Characterization Data Summary Report will be prepared and submitted to USEPA/MDEQ for review in accordance with the schedule provided in Section 5.0.

2.7 Weekly Reporting, Project Conference Calls, and Project Meetings

A project update call with CFAC/Roux/USEPA/MDEQ was held on August 2, 2018 to discuss outstanding deliverables awaiting approval by USEPA, upcoming deliverables, the fall sampling schedule, and the fall public meeting. As a result of the call, the fall Public Meeting/Community Liaison Panel Meeting was scheduled for October 17, 2018. Project conference calls will continue to be conducted throughout implementation of the Phase II Site Characterization to discuss project progress and schedule.

3. Work Planned for Next Reporting Period

This section summarizes the work planned for the next reporting period of September 2018.

3.1 Baseline Risk Assessment Work Plans

As described in Section 2.1, USEPA submitted additional comments on the BHHRA WP and BERA WP on August 31, 2018. CFAC/Roux are preparing responses to these comments to be submitted to USEPA for review and approval during the next reporting period. Following USEPA approval of the comments, Roux will finalize the work plans.

3.2 Background Sampling and Analysis Plan

As described in Section 2.2, USEPA provided additional comments on the Background SAP on August 2, 2018. CFAC/Roux prepared responses to the additional comments and submitted responses to USEPA on August 17, 2018. Based upon USEPA's review and concurrence of the additional responses, CFAC/Roux will revise the Background SAP for USEPA approval during the next reporting period prior to the fall sampling event.

3.3 Preparation of Risk Assessment Interim Deliverables

Roux and EHS Support will continue to prepare the remaining risk assessment interim deliverable regarding refined ESVs to supplement the BERA WP. The interim deliverable will be submitted to USEPA for review and approval during the next reporting period.

3.4 Phase II Site Characterization Field Activities

Phase II Site Characterization field activities will recommence in late September and will continue through October 2018 during the low-water season. Surface water, sediment, and porewater samples will be collected from select surface water features at the Site. Groundwater samples will be collected from historic, Phase I, and Phase II monitoring wells and former production wells. In addition, Roux will continue completing onsite Phase II soil borings with hand tools and collecting soil samples. Samples will be collected in accordance with the Phase II SAP and applicable field modifications. Hydrometrics and Kennedy Jenks personnel will support Roux in the sampling efforts. Results of the fall 2018 sampling will be presented in the Phase II Site Characterization Data Summary Report.

Background soil samples are also proposed to be collected in September 2018, pending the approval of the Background SAP.

3.5 Preparation of the Phase II Site Characterization Data Summary Report

Roux will continue to review and analyze the field and laboratory data generated during the Phase II Site Characterization Program in preparation of the Draft Phase II Site Characterization Data Summary Report. The report will be submitted to USEPA/MDEQ for review in accordance with the schedule provided in Section 5.0.

3.6 Investigation Derived Waste

Monitoring well development purge water and groundwater IDW is being stored onsite in accordance with the IDW Management Plan. Water IDW will continue to be generated through October 2018 as groundwater

sampling and surface water sampling activities continue. Upon completion of sampling activities, Roux personnel will collect water IDW samples from the container onsite and based on the sample results, Roux, with the support of Cascade Drilling, will coordinate water disposal in accordance with the IDW Management Plan.

4. Database Updates

Validation of laboratory data from the Phase II Site Characterization is being performed by Laboratory Data Consultants (LDC) as a subcontractor to Roux. In August 2018, LDC provided 22 sets of validated analytical data to Roux. These 22 sets of data and 32 sets received in prior reporting periods were uploaded to the CFAC RI/FS database. All validated laboratory data from the first round of sampling in 2018 has been received and uploaded to the CFAC RI/FS database.

Validated data will continue to be imported into the project database and managed in accordance with the data management procedures outlined in Section 7.10 of the Phase II SAP. Future progress reports will discuss updates to the project database.

5. Scope/Schedule Revisions

An updated project schedule is attached to this Progress Report in Appendix A. The schedule was updated to reflect progress based on RI/FS activities completed through August 2018. A schedule for the Phase II Site Characterization was included in the Phase II SAP and will be provided to USEPA routinely throughout the RI/FS in future progress reports.

On behalf of CFAC, Roux will continue to pursue the overall objectives described in the AOC and the RI/FS Work Plan. Roux will continue to inform the USEPA of completed and upcoming activities pursuant to the requirements of the AOC in future progress reports.

Respectfully submitted,

ROUX ENVIRONMENTAL ENGINEERING AND GEOLOGY, D.P.C.



Laura Jensen, P.G. (NY)
Project Hydrogeologist



Michael Ritorto, P.G. (NY)
Principal Hydrogeologist /
RI Project Manager



Andrew Baris, P.G. (NY)
Executive Vice President /
Principal Hydrogeologist /
RI/FS Project Manager

APPENDIX A

Project Schedule

ED 002345C 00006391-00012

CFAC RI/FS Schedule Updated August 29, 2018																													
ID	Deliverable/Task Name	Duration	Start	Finish	Company	Predecessors	November 2017	December 2017	January 2018	February 2018	March 2018	April 2018	May 2018	June 2018	July 2018	August 2018	September 2018	October 2018	November 2018	December 2018	January 2019	February 2019	March 2019	April 2019	May 2019	June 2019	July 2019	August 2019	September 2019
1	AOC is executed by all parties	1 day	Mon 11/30/15	Mon 11/30/15	EPA/CFAC																								
2	Historical Records Review	160 days	Mon 2/8/16	Fri 9/16/16	Roux																								
3	X Draft Health and Safety Plan (HASP)	30 edays	Mon 11/30/15	Wed 12/30/15	Roux	1																							
4	X Final Health and Safety Plan (HASP)	25 days	Thu 12/31/15	Wed 2/3/16	Roux	3																							
5	Site is clear of Snow / Field Work Begins	1 day	Mon 4/4/16	Mon 4/4/16																									
6	Pre-Intrusive Task 1 - Site Reconnaissance	10 days	Mon 4/4/16	Fri 4/15/16	Roux	555																							
7	Pre-Intrusive Task 2 - Geophysical Survey	5 days	Mon 4/18/16	Fri 4/22/16	Roux	6																							
8	Pre-Intrusive Task 3 - Soil Gas Survey	7 days	Mon 4/18/16	Tue 4/26/16	Roux	755																							
9	SAP Addendum	75 days	Mon 4/18/16	Fri 7/29/16	Roux																								
10	X Draft SAP Addendum	40 days	Mon 4/18/16	Fri 6/10/16	Roux	6																							
11	EPA Review of Draft SAP Addendum	15 days	Mon 6/13/16	Fri 7/1/16	EPA	10																							
12	X Final SAP Addendum	20 days	Mon 7/4/16	Fri 7/29/16	Roux	11																							
13	Source Area Investigation - Phase I Site Characterization Field Activities	120 days	Mon 5/9/16	Fri 10/21/16	Roux/Hydrometrics																								
14	GPR Utility Mark-Outs	5 days	Mon 5/9/16	Fri 5/13/16	Roux																								
15	Clearing / Grading for Drill Rig Access	4 days	Wed 5/11/16	Mon 5/16/16	Roux																								
16	Sonic Rig 1	75 days	Mon 5/16/16	Fri 8/26/16	Roux	8FS+10 days																							
17	Sonic Rig 2	50 days	Mon 5/16/16	Fri 7/22/16	Roux	8FS+10 days																							
18	Geoprobe	20 days	Mon 5/16/16	Fri 6/10/16	Hydrometrics	8FS+10 days																							
19	Landfill GPR Survey Field Work	3 days	Mon 7/25/16	Wed 7/27/16	Roux																								
20	Test Pitting	5 days	Mon 8/15/16	Fri 8/19/16	Roux																								
21	Additional Monitoring Well redevelopment activities	10 days	Mon 10/10/16	Fri 10/21/16	Hydrometrics																								
22	Background Area Investigation	5 days	Mon 6/13/16	Fri 6/17/16	Hydrometrics	18																							
23	Operational Grid Area Investigation	30 days	Mon 6/20/16	Fri 7/29/16	Hydrometrics	22																							
24	Site-Wide Surface Water Sampling - Event 1	5 days	Mon 9/5/16	Fri 9/9/16	Roux/Hydrometrics	16FS+5 days																							
25	Site-Wide Groundwater Sampling - Event 1	15 days	Mon 9/12/16	Fri 9/30/16	Roux/Hydrometrics	24																							
26	Site-Wide Surface Water Sampling - Event 2	5 days	Mon 12/5/16	Fri 12/9/16	Roux/Hydrometrics	24SS+90 edays																							
27	Site-Wide Groundwater Sampling - Event 2	15 days	Mon 12/12/16	Fri 12/30/16	Roux/Hydrometrics	26																							
28	Site-Wide Surface Water Sampling - Event 3	5 days	Mon 3/13/17	Fri 3/17/17	Roux/Hydrometrics	27SS+90 edays																							
29	Site-Wide Groundwater Sampling - Event 3	15 days	Mon 3/20/17	Fri 4/7/17	Roux/Hydrometrics	28																							
30	Site-Wide Surface Water Sampling - Event 4	5 days	Mon 6/12/17	Fri 6/16/17	Roux/Hydrometrics	28SS+90 edays																							
31	Site-Wide Groundwater Sampling - Event 4	15 days	Mon 6/19/17	Fri 7/7/17	Roux/Hydrometrics	30																							
32	Investigation Derived Waste Management/Disposal	390 days	Mon 4/4/16	Fri 9/29/17	Roux	555																							
33	Phase 1 Site Characterization Data Summary Report	251 days	Mon 10/3/16	Mon 9/18/17	Roux																								
34	Data Validation Completion	35 days	Mon 10/3/16	Fri 11/18/16	Data Validator	25																							
35	X Draft Phase I Site Characterization Summary Report to EPA/MDEQ	71 days	Mon 11/21/16	Mon 2/27/17	Roux	34																							
36	EPA review of Draft Phase I Data Summary Report	30 days	Mon 3/6/17	Fri 4/14/17	EPA	35																							
37	X Response to EPA/MDEQ Comments on Draft Phase I Data Summary Report	100 days	Mon 4/17/17	Fri 9/1/17	Roux/EPA	36																							
38	X Final Submission of Phase I Summary Report to EPA/MDEQ	10 days	Tue 9/5/17	Mon 9/18/17	Roux	37																							
39	Screening Level Ecological Risk Assessment (SLERA)	361 days	Mon 5/2/16	Mon 9/18/17	Roux																								
40	Completion of SLERA Field Work	5 days	Mon 5/2/16	Fri 5/6/16	Roux																								
41	X Draft SLERA Summary Report	71 days	Mon 11/21/16	Mon 2/27/17	Roux	34																							
42	EPA review of Draft SLERA Report	30 days	Mon 3/6/17	Fri 4/14/17	EPA	41																							
43	X Response to EPA/MDEQ Comments on Draft SLERA Summary Report	100 days	Mon 4/17/17	Fri 9/1/17	Roux/EPA	42																							
44	X Final Submission of SLERA Report to EPA/MDEQ	10 days	Tue 9/5/17	Mon 9/18/17	Roux	43																							
45	2017 Additional Field Activities	85 days	Mon 4/17/17	Fri 8/11/17	Roux																								
46	Preparation of 2017 field activities plan/SAP Mods	30 days	Mon 4/17/17	Fri 5/26/17	Roux	36																							
47	Pneumatic Slug Testing	15 days	Mon 7/10/17	Fri 7/28/17	Roux	31																							
48	Asbestos Landfill Soil Sampling	10 days	Mon 7/31/17	Fri 8/11/17	Roux/Hydrometrics	47																							
49	Groundwater and Surface Water Sampling Data Summary Report	101 days	Mon 7/10/17	Mon 11/27/17	Roux																								
50	Validation of Round 4 sampling data	25 days	Mon 7/10/17	Fri 8/11/17	Data Validator	31																							
51	X GW/SW Summary Report to EPA/MDEQ	76 days	Mon 8/14/17	Mon 11/27/17	Roux	50																							
52	Baseline Human Health Risk Assessment Work Plan	270 days	Mon 9/18/17	Fri 9/28/18	Roux																								
53	X Draft BHHRA Work Plan to EPA/MDEQ	60 edays	Mon 9/18/17	Fri 11/17/17	Roux/EHS Support	38																							
54	EPA review of Draft BHHRA Work plan	42 days	Mon 11/20/17	Tue 1/16/18	EPA	53																							
55	X Response to EPA/MDEQ Comments on BHHRA Work Plan	93 days	Wed 1/17/18	Fri 5/25/18	Roux	54																							
56	EPA review of Response to Comments on BHHRA Work Plan	76 days	Mon 5/28/18	Fri 9/7/18	EPA	55																							
57	X Final Submission of BHHRA WP to EPA/MDEQ	15 days	Mon 9/10/18	Fri 9/28/18	Roux	56																							
58	Baseline Ecological Risk Assessment Work Plan	270 days	Mon 9/18/17	Fri 9/28/18	Roux																								
59	X Draft BERA Work Plan to EPA/MDEQ	60 edays	Mon 9/18/17	Fri 11/17/17	Roux/EHS Support	44																							
60	EPA review of Draft BERA Work Plan	42 days	Mon 11/20/17	Tue 1/16/18	EPA	59																							
61	X Response to EPA/MDEQ Comments on BERA Work Plan	93 days	Wed 1/17/18	Fri 5/25/18	Roux	60																							
62	EPA review of Response to Comments on BERA Work Plan	76 days	Mon 5/28/18	Fri 9/7/18	EPA	61																							
63	X Final Submission BERA Work Plan to EPA/MDEQ	15 days	Mon 9/10/18	Fri 9/28/18	Roux	62																							
64	Phase II Remedial Investigation Sampling and Analysis Plan	117 days	Tue 11/28/17	Wed 5/9/18	Roux																								
65	X Draft Phase II Sampling and Analysis Plan to EPA/MDEQ	67 days	Tue 11/28/17	Wed 2/28/18	Roux	51																							
66	EPA review of draft Phase II Sampling and Analysis Plan	25 days	Thu 3/1/18	Wed 4/4/18	EPA	65																							
67	X Response to EPA/MDEQ Comments on Phase II Sampling and Analysis Plan	15 days	Thu 4/5/18	Wed 4/25/18	Roux	66																							
68	X Final Phase II Sampling and Analysis Plan	10 days	Thu 4/26/18	Wed 5/9/18	Roux	67																							
69	South Percolation Pond Expedited Risk Assessment	35 days	Mon 10/30/17	Fri 12/15/17																									
70	South Percolation Pond Risk Expedited Risk Assessment Field Activities	10 days	Mon 10/30/17	Fri 11/10/17	Roux																								
71	Validation of South Pond Data	25 days	Mon 11/13/17	Fri 12/15/17	Data Validator	70																							
72	Phase II Remedial Investigation	129 days																											